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LANDSCAPE & VISUAL IMPACT ASSESSMENT

Cappakeel SID Substation

Co. Laois

Prepared by Macro Works Ltd

April 2026



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This LVIA should be read in conjunction with the LVIA Photomontages produced by Macro Works Ltd

Registered Landscape Architect

1. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

1.1 INTRODUCTION

This Landscape and Visual Assessment (LVIA) has been prepared to accompany a planning application for a SID substation development in County Laois northeast of the settlement of Port Laoise.

For clarity, it should be noted that the terms 'proposed development' and 'proposed substation and grid connection' are interchangeable in this report and, where contextually relevant, references are also made to the consented Cappakeel Solar Farm which the proposed substation is encircled by. It should be noted that electricity generated on this solar farm will be transmitted on to the national electricity grid via the proposed substation and grid connection.

This LVIA describes the landscape context of the proposed development and assesses the likely landscape and visual impacts of the proposed development on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

- Landscape Impact Assessment (LIA) relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the development will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.
- Visual Impact Assessment (VIA) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements. Visual impacts may occur from; Visual Obstruction (blocking of a view, be it full, partial or intermittent) or; Visual Intrusion (interruption of a view without blocking).

1.1.1 Approach and Statement of Authority

This LVIA adopts an approach that is founded in the following best practice guidance documents:

- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);
- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and
- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.

This LVIA was prepared by Macro Works Ltd of Cherrywood Business Park, Loughlinstown, Dublin 18; a consultancy firm specialising in Landscape and Visual Assessment and associated maps and graphics. Macro Works' relevant experience includes a broad range of infrastructural, renewable energy, industrial and commercial projects since 1999, including numerous urban, residential, and mixed use development projects.

1.1.2 Description of the Proposed Development

The overall development is comprised of two constituent parts with separate planning consenting procedures, which include:

1. The 110kV electrical substation and associated works within the townland of Morett Co. Laois, which will connect the permitted Cappakeel Solar Farm to the national grid via the adjacent Cushaling-Portlaoise 110kV overhead line within the site boundary, and connection to the Coolnabacky 110kV substation via an underground tail fed connection to provide a circuit between the Cushaling-Portlaoise 110kV line and the Coolnabacky 110kV Substation traversing the townlands of Derrytrasna, Park Or Dunamase, Aghnahily, Dysart, Coolnacarrick, Heathlodge, Ballygormill North, Ballinlough, Killenny, Raheen, Money Upper, Lamberton Demesne, Greatheath, Cremorgan, Ballygormill South, Carrigeen, Greatheath, Hophall, Ballycarroll, Morett and Powelstown, Co. Laois. Planning permission for this component is sought from An Coimisiún Pleanála under section 182A of the PDA.

2. The permitted energy generating part of the main Cappakeel Solar Farm which consists of solar panels and associated infrastructure, as noted earlier. This is identified as the 'Solar Farm'. Included in the planning application is an underground Internal Network cable (Medium Voltage [MV], 33kV) between the West (A), Centre West (B), Centre (C), Centre East (D) and East (E) Parcel of the proposed solar farm to provide the electrical link between the solar farm and the proposed 110kV substation situated in the West Parcel. Consent for the solar farm was granted by Laois County Council on 18th September 2025, under Pl. Ref. 2560148, section 34 of the PDA, with consent for the solar farm granted by An Coimisiún Pleanála on 17th February 2026 (Ref No.: PL-500061-LS).

1.2 METHODOLOGY

This document uses methodology as prescribed in the previously mentioned GLVIA3, which follows the European Landscape Convention (ELC) definition of landscape:

> *'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe, 2000). Thus, GLVIA-2013 covers all landscapes from "high mountains and wild countryside to urban and fringe farmland (rural landscapes), marine and coastal landscapes (seascapes) and the landscapes of villages towns and cities (townscapes)" - whether protected or degraded.*

1.2.1 Scope of the Assessment

GLVIA3 establishes guidelines and not a specific methodology. The preface recognises that:

> *'This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand.'*

The methodology for this assessment has therefore been developed specifically for this assessment to ensure that it is appropriate and fit for purpose. The LVIA Methodology can be summarised as undertaking the following key tasks:

- Desk study and site visits in July 2024;
- Defining the Baseline Landscape setting and conditions;
- Identification and Evaluation of key components of the proposed development;
- Consideration of Mitigation Measures;
- Assessment of Landscape Effects;
- Assessment of Visual Effects; and
- Summary Statement of Significance.

1.2.2 Study Area

From similar studies, it is anticipated that the proposed development is likely to be difficult to discern beyond approximately 5km and is not likely to give rise to significant landscape or visual impacts beyond approximately 2km. In the interests of a comprehensive appraisal, a 5km radius study area is used in this instance. However, there will be a particular focus on receptors contained within 2km, except where iconic or designated scenic viewpoints exist at greater distances out to 5km (refer to Figure 1.1). A study area of 5km has typically been used for solar projects in Ireland, Northern Ireland and Great Britain and this approach has been deemed acceptable by multiple planning authorities including Laois County Council. In the context of the proposed 110kV substation and grid connection which is the subject of this application to An Coimisiún Pleanála the 5km study area is considered conservative as the development area is of significantly smaller geographical scale than the associated solar farm. It should be noted that the study area is principally set around the substation compound as the underground cable aspect of the development will be entirely underground beyond the boundary of the wider solar farm development.

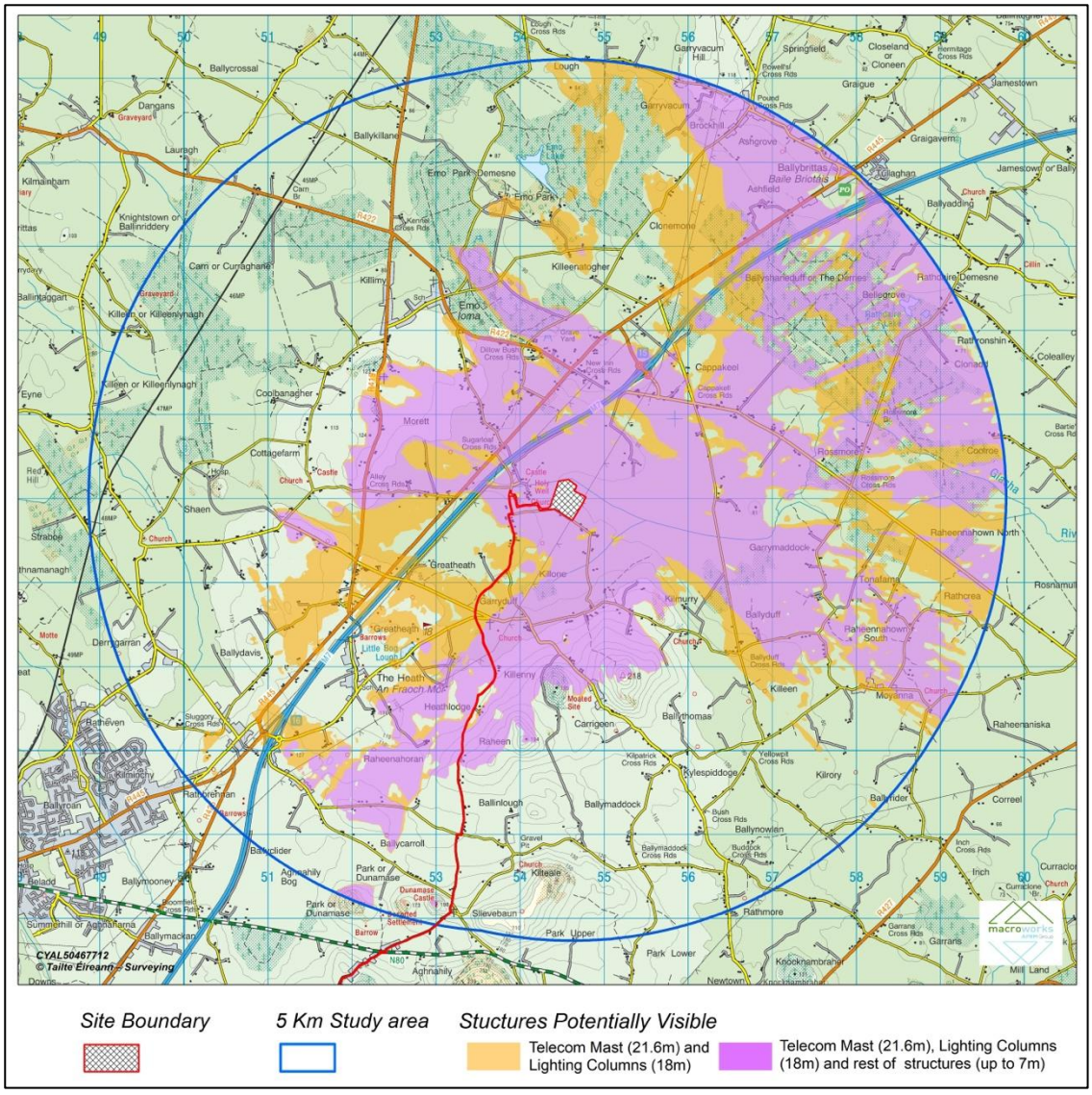


Figure 1.1 5km Extent of the Study Area

1.2.3 Landscape Impact Assessment Criteria

This part of the LVIA provides an assessment of how the introduction of the proposed development will affect the physical features and fabric of the landscape, and then how the proposals influence landscape character with reference to published descriptions of character and an understanding of the contemporary character of the landscape as informed through desktop and site studies.

When assessing the potential landscape effects of the development, the value and sensitivity of the landscape receptor is weighed against the magnitude of impact to determine the significance of the landscape effect. Criteria outlined below are used to guide these judgements.

1.2.3.1 Landscape Sensitivity

The sensitivity of the landscape to change is the degree to which a particular setting can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. In accordance with GLVIA3, the sensitivity of a landscape receptor (Landscape Character Area or feature) is derived from combining judgements in relation to its susceptibility to change and its value. The judgement reflects such factors as its quality, value, contribution to landscape character and the degree to which the particular element or characteristic can be replaced or substituted. Landscape Sensitivity is classified using the following criteria set out in Table 1.1.

Table 1.1 Landscape Value and Sensitivity

Sensitivity	Description
Very High	Areas where the landscape character exhibits a very low capacity for change in the form of development. Examples of which are high value landscapes, protected at an international or national level (World Heritage Site/National Park), where the principal management objectives are likely to be protection of the existing character.
High	Areas where the landscape character exhibits a low capacity for change in the form of development. Examples of which are high value landscapes, protected at a national or regional level (Area of Outstanding Natural Beauty), where the principal management objectives are likely to be considered conservation of the existing character.
Medium	Areas where the landscape character exhibits some capacity and scope for development. Examples of which are landscapes, which have a designation of protection at a county level or at non-designated local level where there is evidence of local value and use.
Low	Areas where the landscape character exhibits a higher capacity for change from development. Typically, this would include lower value, non-designated landscapes that may also have some elements or features of recognisable quality, where landscape management objectives include, enhancement, repair and restoration.
Negligible	Areas of landscape character that include derelict, mining, industrial land or are part of the urban fringe where there would be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas could be focused on change, creation of landscape improvements and/or restoration to realise a higher landscape value.

1.2.4 Magnitude of Change – Landscape

The magnitude of change is a product of the scale, extent or degree of change that is likely to be experienced as a result of the proposed development and to a lesser extent the duration and reversibility of that effect. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the immediate setting that may have an effect on the landscape character. Table 1.2 outlines criteria used to inform this judgement.

Table 1.2 Magnitude of Change – Landscape

Criteria	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an extensive change of the landscape in terms of character, value and quality.
High	Change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to a considerable change of the landscape in terms of character, value and quality.
Medium	Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that would lead to noticeable changes in landscape character, and quality.
Low	Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements that would lead to discernible changes in landscape character, and quality.
Negligible	Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable leading to no material change to landscape character, and quality.

1.2.5 Visual Impact Assessment Criteria

This part of the LVIA provides an assessment of how the introduction of the proposed development will affect views within the landscape. It therefore needs to consider:

- Direct impacts of the proposed development upon views through intrusion or obstruction;
- The reaction of viewers who may be affected, e.g. residents, walkers, road users; and
- The overall impact on visual amenity.

It has been deemed appropriate to structure the assessment around a series of representative viewpoint locations. All viewpoints are located within the public domain and are representative of views available from main thoroughfares and pedestrian areas within the vicinity of the proposed development. The selected viewpoints are considered to be comprehensive in communicating the variable nature of the visual effects.

When assessing the potential visual effects of the development, the sensitivity of the visual receptor is weighed against the magnitude of the visual impact to determine the significance of the visual effect. Criteria outlined below are used to guide these judgements.

1.2.5.1 *Sensitivity of Visual Receptors*

As with landscape sensitivity, the sensitivity of a visual receptor is categorised as Very High, High, Medium, Low, and Negligible. Unlike landscape sensitivity however, the sensitivity of visual receptors has an anthropocentric (human) basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity the viewer is engaged in and whether this heightens their awareness of the surrounding environment.

A list of the factors considered by the assessor in estimating the level of sensitivity for a particular visual receptor is outlined below to establish visual receptor sensitivity at each viewpoint location.

1.2.5.2 *Susceptibility of Visual Receptors to Change*

In accordance with GLVIA3, visual receptors most susceptible to changes in views and visual amenity are:

- "Residents at home;
- People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views;
- Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;
- Communities where views contribute to the landscape setting enjoyed by residents in the area;
- Travellers on road rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened".
- Visual receptors that are less susceptible to changes in views and visual amenity include;
- "People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape;
- People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life".

1.2.5.3 *Values attached to Views*

The value attached to a view is determined by considering the following:

- Recognised scenic value of the view (Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Developments Plans, for example, a public consultation process is required;
- Views from within highly sensitive landscape areas. These are likely to be in the form of Architectural Conservation Areas, which are incorporated within the Development Plan and therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them;
- Primary views from residential receptors. Even within a dynamic city context, views from residential properties are an important consideration in respect of residential amenity;
- Intensity of use, popularity. This relates to the number of viewers likely to experience a view on a regular basis and whether this is significant at a national or regional scale;
- Provision of vast, elevated panoramic views. This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas;

- Sense of remoteness and/or tranquillity. Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more receptive to changes in the view than those taking in the view of a busy street scene, for example;
- Degree of perceived naturalness. Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by distinctly manmade features;
- Presence of striking or noteworthy features. A view might be strongly valued because it contains a distinctive and memorable landscape / townscape feature such as a cathedral or castle;
- Historical, cultural and / or spiritual significance. Such attributes may be evident or sensed by receptors at certain viewing locations, which may attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings;
- Rarity or uniqueness of the view. This might include the noteworthy representativeness of a certain landscape type and considers whether the receptor could take in similar views anywhere in the broader region or the country;
- Integrity of the landscape character. This looks at the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components;
- Sense of place. This considers whether there is special sense of wholeness and harmony at the viewing location;
- Sense of awe. This considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations which are deemed to satisfy many of the above criteria are likely to be of higher sensitivity, and no relative importance is inferred by the order of listing.

It is recognised that a viewer's interpretation and experience of the landscape can have preferential and subjective components. Where relevant, judgements are made on those elements of the landscape that are considered to contribute more prominently and positively to the visual landscape resource as well as those elements that contribute negatively. Overall sensitivity may be a result of a number of these factors or, alternatively, a strong association with one or two in particular.

1.2.6 Magnitude of Change – Visual

The magnitude of change is again a product of the scale, extent, or degree of change that is likely to be experienced as a result of the proposed development. This is directly influenced by its 'visual presence / prominence', as experienced by visual receptors in the landscape. These terms are somewhat quantitative in nature, and essentially relate to how noticeable or 'dominant' the proposal is within a particular view. Aside from the obvious influence of scale and distance, a development's visual presence is influenced by the extent and complexity of the view, contextual movement in the landscape, the nature of its backdrop, and its relationship with other focal points or prominent features within the view. It is often, though not always, expressed using one of the following terms: Minimal; Sub-dominant; Co-dominant; Dominant; Highly dominant. Criteria used to inform judgements are provided in Table 1.3.

Table 1.3 Magnitude of Change – Visual

Criteria	Description
Very High	Complete or very substantial change in view, dominant, involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, e.g., through removal of key elements.

High	A major change in the view that is highly prominent and has a strong influence on the overall view. This may involve the substantial obstruction of existing views or a complete change in character and composition of baseline, e.g. through removal of key elements or the introduction of new features that would heavily influence key elements.
Medium	Moderate change in view: which may involve partial obstruction of existing view or partial change in character and composition of baseline, i.e., pre-development view through the introduction of new elements or removal of existing elements. Change may be prominent but would not substantially alter scale and character of the surroundings and the wider setting. View character may be partially changed through the introduction of features which, though uncharacteristic, may not necessarily be visually discordant.
Low	Minor change in baseline, i.e. pre-development view - change would be distinguishable from the surroundings whilst composition and character would be similar to the pre change circumstances.
Negligible	Very slight change in baseline, i.e. pre-development view - change would be barely discernible. Composition and character of view substantially unaltered.

1.2.7 Significance of Effect

The significance of a landscape or visual effect is based on a balance between the sensitivity of the receptor and the magnitude of change, and is categorised as Profound, Substantial, Moderate, Slight, or Imperceptible. Intermediate judgements are also provided to enable an effect to be more accurately described where relevant. 'No Effect' may also be recorded as appropriate where the effect is so negligible it is not noteworthy.

The significance category judgement is arrived at using the Significance Matrix at Table 1.4 as a guide. This applies the principle of significance being a function of magnitude weighed against sensitivity, but employs slightly different terminology that avoids the potentially confusing use of the term 'significant' (as recommended by GLVIA3 Statement of Clarification 1/13 (Landscape institute, 10th June 2013)).

Indicative criteria descriptions used in relation to the significance of effect category are presented at Table 1.5.

Table 1.4 Significance Matrix

	Sensitivity of Receptor				
Magnitude	**Very High**	**High**	**Medium**	**Low**	**Negligible**
Very High	Profound	Profound-substantial	Substantial	Moderate	Slight
High	Profound-substantial	Substantial	Substantial-moderate	Moderate-slight	Slight-imperceptible
Medium	Substantial	Substantial-moderate	Moderate	Slight	Imperceptible
Low	Moderate	Moderate-slight	Slight	Slight-imperceptible	Imperceptible
Negligible	Slight	Slight-imperceptible	Imperceptible	Imperceptible	Imperceptible

Table 1.5 Indicative significance of effect criteria descriptions

	Landscape	Visual
Profound	There are notable changes in landscape characteristics over an extensive area or a very intensive change over a more limited area.	The view is entirely altered, obscured or affected.
Substantial	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the landscape. There are notable changes in landscape characteristics over a substantial area or an intensive change over a more limited area.	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the visual environment. The proposal affects a large proportion of the overall visual composition, or views are so affected that they form a new element in the physical landscape.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. There are minor changes over some of the area or moderate changes in a localised area.	An effect that alters the character of the visual environment in a manner that is consistent with existing and emerging trends. The proposal affects an appreciable segment of the overall visual composition, or there is an intrusion in the foreground of a view.
Slight	An effect which causes noticeable changes in the character of the landscape without affecting its sensitivities. There are minor changes over a small proportion of the area or moderate changes in a localised area or changes that are reparable over time.	An effect which causes noticeable changes in the character of the visual environment without affecting its sensitivities. The affected view forms only a small element in the overall visual composition or changes the view in a marginal manner.
Imperceptible	An effect capable of measurement but without noticeable consequences. There are no noticeable changes to landscape context, character or features.	An effect capable of measurement but without noticeable consequences. Although the development may be visible, it would be difficult to discern resulting in minimal change to views.

It is important that the likely effects of the proposals are transparently assessed and understood in order that the determining authority can bring a balanced, well-informed judgement to bear when making a planning decision.

As such, whilst the significance matrix and criteria provide a useful guide, the significance of an effect is ultimately determined by the landscape specialist using professional judgement, and also in the context of occasionally using hybrid judgements to account for nuance.

Effects assessed as 'Substantial' or greater (shaded cells) are considered to be the most notable in landscape and visual terms, and may be regarded as 'Significant', albeit it is important to note that this is not a reflection on their acceptability in planning terms.

1.2.8 Quality of Effects

In addition to assessing the significance of landscape and visual effects, the quality of the effects is also determined. Within this LVIA, effects are described as negative/adverse, neutral, or positive/beneficial, and the following criteria has been used to guide these judgements.

- Positive/beneficial - A change which improves the quality of the environment, enhancing the existing view/landscape;
- Neutral - No effects or effects that are imperceptible, within normal bounds of variation e.g. will neither detract from nor enhance the existing view/landscape;
- Negative/adverse - A change which reduces the quality of the environment, detracting from the existing view/landscape.

In the case of new energy / infrastructure developments within rural and semi-rural settings, the landscape and visual change brought about by an increased scale and intensity of built form is seldom considered to be positive / beneficial. Effects in these contexts are generally considered to be adverse in nature, or neutral, where the effect has little influence on the landscape/views.

1.3 LANDSCAPE AND VISUAL POLICY CONTEXT AND DESIGNATIONS

1.3.1 Laois County Development Plan 2021-2027 - Landscape Character Assessment

A Landscape Character Assessment has been produced for County Laois and has been incorporated into the current Laois County Development Plan 2021-2027. Within the Landscape Character Assessment, the County is divided into six no. Landscape Character Types (LCTs). The proposed substation development and wider solar farm is largely contained within the landscape character type 'LCT - 2 Lowland Agricultural Areas' (refer to Figure 1.2). LCT 2 – 'Lowland Agricultural Areas' is described as covering "the largest proportion of County Laois. In terms of land use, it is comprised primarily of pastoral and tillage agriculture." It is also important to note that the underground cable connection traverses through 'LCT 1 - Mountain, Hills and Upland Areas' to the south of the solar farm development and is classified with a High-medium sensitivity classification.



Figure 1.2 Excerpt from the current Laois County Development Plan showing landscape units in relation to the proposed development. (Green Colour denotes Lowland Agricultural Areas, Dotted hatch denotes Mountains, Hills and Upland Areas)

The current CDP outlines sensitivity classifications for each LCT within County Laois, with the 'Lowland Agricultural Areas' classified with a 'Low Sensitivity'. Areas of 'Low Sensitivity' are described as "areas with the capacity to generally accommodate a wide range of uses without significant adverse effects on the appearance or character of the area". The current CDP also identifies general policy objectives for landscape character areas and more specific policy objectives for each landscape character area. Those that are deemed relevant to the proposed development and wider solar farm are included below:

Policy Objectives for Landscape Character Areas:

LCA 1: Ensure that consideration of landscape sensitivity, as indicated in Table 11.6 of the Plan, is an important factor in determining development uses In areas of high landscape sensitivity, the design, type and the choice of location of proposed development in the landscape will also be critical considerations.

LCA 2: Protect and enhance the county's landscape, by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the existing local landscape and conserve valuable habitat including any European and National Designations.

LCA 3: Seek to ensure that local landscape features, including historic features and buildings, hedgerows, shelter belts and stone walls, are retained, protected and enhanced where appropriate, so as to preserve the local landscape and character of an area, whilst providing for future development.

LCA 4: Seek to minimise the individual and cumulative adverse visual impacts that local concentrations of one-off housing, outside of settlements, may have on Hills and Upland, River Corridor and Lakes and Mountain landscape character areas or High Sensitivity areas. In this regard, in locations where the Council considers that there is a risk of individual or cumulative adverse impacts, the Council will only consider proposals for housing developments where a need for the dwelling has been demonstrated in accordance with the criteria contained in the Rural Housing Policy contained in Chapter 4.

Policy Objectives for Lowland Agricultural Areas:

LCA 12: Recognise that this lowland landscape character area includes areas of significant landscape and ecological value, which are worthy of protection, particularly the 18th and 19th century estate landscapes and associated parkland & woodland to develop them as a tourism resource.

LCA 13: Continue to permit development that can utilise existing structures, settlement areas and infrastructure, whilst taking account of the visual absorption opportunities provided by existing topography and vegetation.

LCA 14: Recognise that the lowlands are made up of a variety of working landscapes, which are critical resources for sustaining the economic and social wellbeing of the county.

LCA 15: Promote good agricultural practices to create a sustainable rural economy and support incentives for smaller rural/family farms to manage their land to avoid loss of hedgerows and field patterns.

1.3.2 Views of Recognised Scenic Value – Laois County Development Plan

Views of recognised scenic value are primarily indicated within Development Plans in the context of scenic views/routes designations, but they might also be indicated on touring maps, guide books, websites, road side rest stops or on post cards that represent the area. Views and Prospects in County Laois are outlined in the current county development plan in Table 11.7 and Map 11.8. Within the 5km extent there is one designated scenic view which is outlined below:

- Scenic view 11- Protected view within the study area and with a view towards the site 'Views towards Carrigeen Hill'

All scenic designations within the study area have been visited during fieldwork investigations. Where there is potential for visibility of the proposed development, a representative view has been included within the visual impact appraisal.

1.4 EXISTING ENVIRONMENT

1.4.1 Landscape Baseline

The landscape baseline represents the existing landscape context and is the scenario against which any changes to the landscape brought about by the proposed development will be assessed. A description of the landscape context of the proposed development site and wider study area is provided below under the headings of landform and drainage, vegetation and land use, centres of population and houses, transport routes and public amenities and facilities. Although this description forms part of the landscape baseline, many of the landscape elements identified also relate to visual receptors i.e. places and transport routes from which viewers can potentially see the proposed development. The visual resource will be described in greater detail in **1.4.2**.

1.4.1.1 *Landform and Drainage*

The site and its immediate surroundings consist mainly of flat to gently rolling terrain, with low-rolling hills and ridges located in the wider study area to the north and southwest of the site. The site itself sits on relatively flat land around the 60-90m AOD contour, with several small streams and drainage ditches within the site boundary and throughout the eastern part of the study area. The grid connection element of the proposed development traverses some rolling lands throughout the wider landscape to the south of the main substation compound.

Whilst several small streams and drainage ditches are contained within the study area, the most notable watercourses within the surrounding wider landscape include the Grand Canal at Vicarstown, located approximately 6 km east of the substation compound at its nearest point, and the River Barrow, situated further to the east, some 9 km from the site at its nearest point.

Emo Lakes are also located to the rear of Emo Demesne in the northern part of the study area. Notable landscape features include Killone Hill, which rises in the wider landscape to the south, as well as Kilteale Hill and Slievebaun Hill, both located along the southern periphery of the study area.

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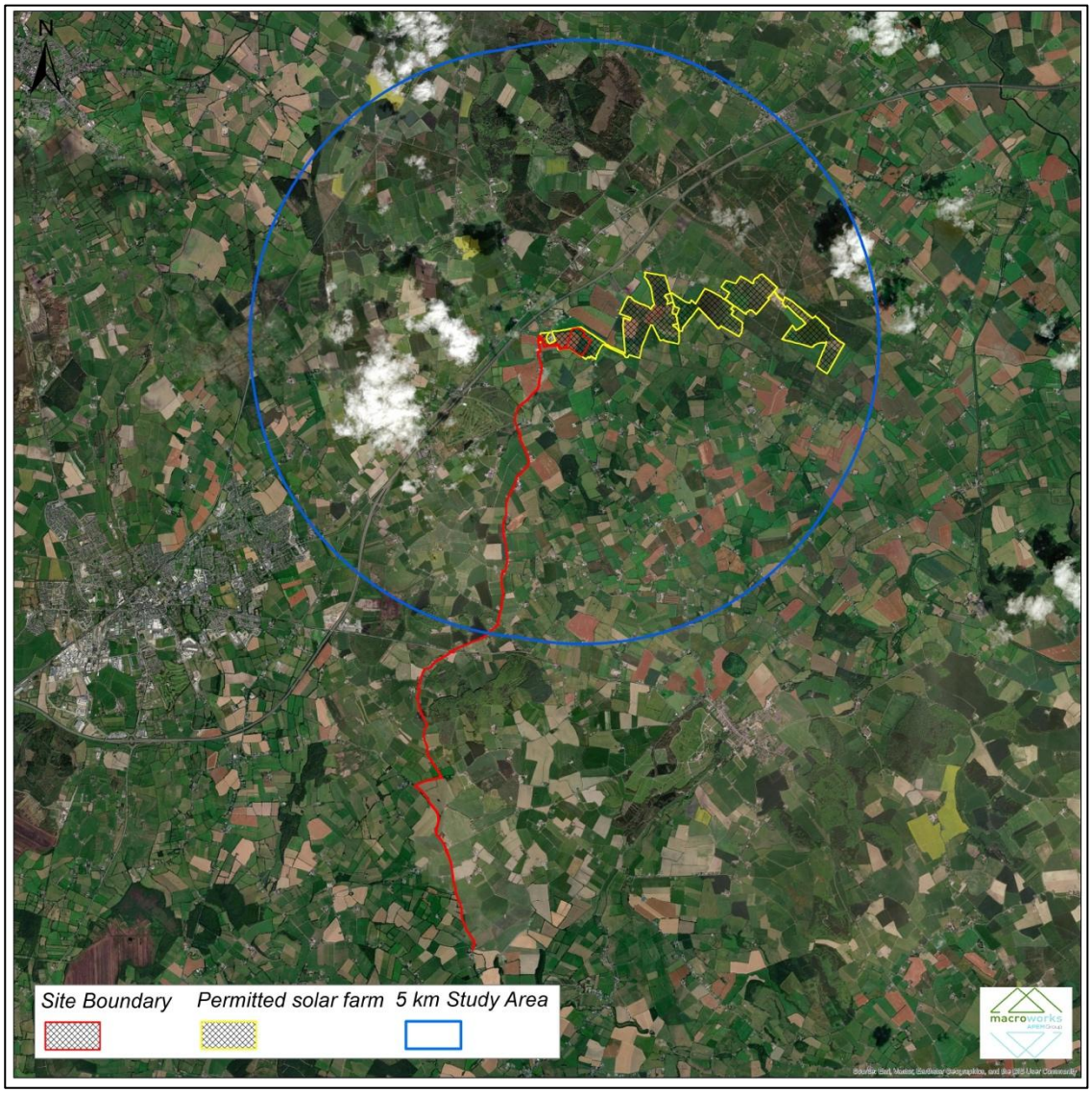


Figure 1.3 Landscape Context of the study area

1.4.1.2 *Vegetation and Land Use*

The predominant land use within the study area is agriculture. The study area comprises mixed farmland with a patchwork of medium- to large-sized geometric fields, generally bordered by dense networks of mixed hedgerow vegetation. The site itself is entirely contained within pastoral fields, also bound by networks of hedgerows. The grid connection corridor is principally influenced by surrounding pastoral lands with some areas of forestry also contained within its wider surrounding lands.

Coniferous forest plantations are another notable land use within the study area, with extensive coniferous woodlands located to the north of the site and in the northern part of the study area. Several prominent areas of broadleaf and mixed woodland are scattered throughout, typically located around demesne landscapes. Approximately 2 km northwest of the site is Emo Park, one of the more prominent demesne landscapes within the study area.

Other notable land uses include the M7 linear transport corridor, situated less than 700 m north of the site at its nearest point, and The Heath Golf Course, located approximately 1.7 km west of the site.

1.4.1.3 *Centres of Population and Housing*

Several small village settlements are located within the 5km study area. The nearest settlement to the proposed development is the small dispersed settlement of Emo, which is situated approximately 1.5 km north of the site, whilst the village of Emo is contained some 2.7 km north of the site. Ballybrittas is also situated north of the site, albeit contained some c. 5km northeast of the proposed development. The town of Portlaoise is one of the main towns in County Laois; however, it is situated outside the 5km study area. In addition to this, a modest rural population comprising linear clusters of dwellings, isolated farmsteads, and small cross-road settlements is scattered throughout the study area surrounding the site.

1.4.1.4 *Transport Routes*

The primary route in relation to the proposed development is the M7 motorway, which is situated approximately 700m north of the proposed substation compound. The M7 meanders through the north-eastern and south-western extents of the study area in a general north-east by south-west direction. Other notable major route corridors within the study area include the R445 regional road, located just over 900m north of the site at its nearest point. Several other regional roads traverse the wider surrounding study area, whilst the study area also encompasses a dense network of interconnecting local roads, several of which pass immediately adjacent to the site. The grid connection aspect of the proposed development is contained along local and regional roads for the majority of its extent but also intersects with the N80 National Secondary route that links the settlements of Stradbally and Portlaoise.

1.4.1.5 *Tourism, Heritage and Public Amenities*

Emo Court Demesne is the most notable public amenity feature within the study area and comprises numerous walking trails within its extensive parkland setting. The house itself is also open for tours during the spring and summer months. The Rock of Dunamaise is another notable amenity feature, located approximately c. 5km southwest of the proposed substation compound. It is a site of particular historical, cultural, and archaeological importance in County Laois. The Heath Golf Course is also another amenity feature within the study area and is located approximately 1.7 km west of the proposed development.

1.4.2 Visual Baseline

Only those parts of the receiving environment that potentially afford views of the proposed development are of concern to this section of the assessment. The solar farm is excluded except in terms of the cumulative visual impact assessment which is presented in 1.7 below. A comprehensive visual baseline and impact assessment is provided in its respective planning application to Laois County Council (25/60148). A computer-generated Zone of Theoretical Visibility (ZTV) map has been prepared to illustrate where the proposed development is potentially visible from. The ZTV map is based solely on terrain data (bare ground visibility), and ignores features such as trees, hedges or buildings, which may screen views. Given the complex vegetation patterns within this landscape, the main value of this form of ZTV mapping is to determine those parts of the landscape from which the proposed development will definitely not be visible, due to terrain screening within the 5km study area.

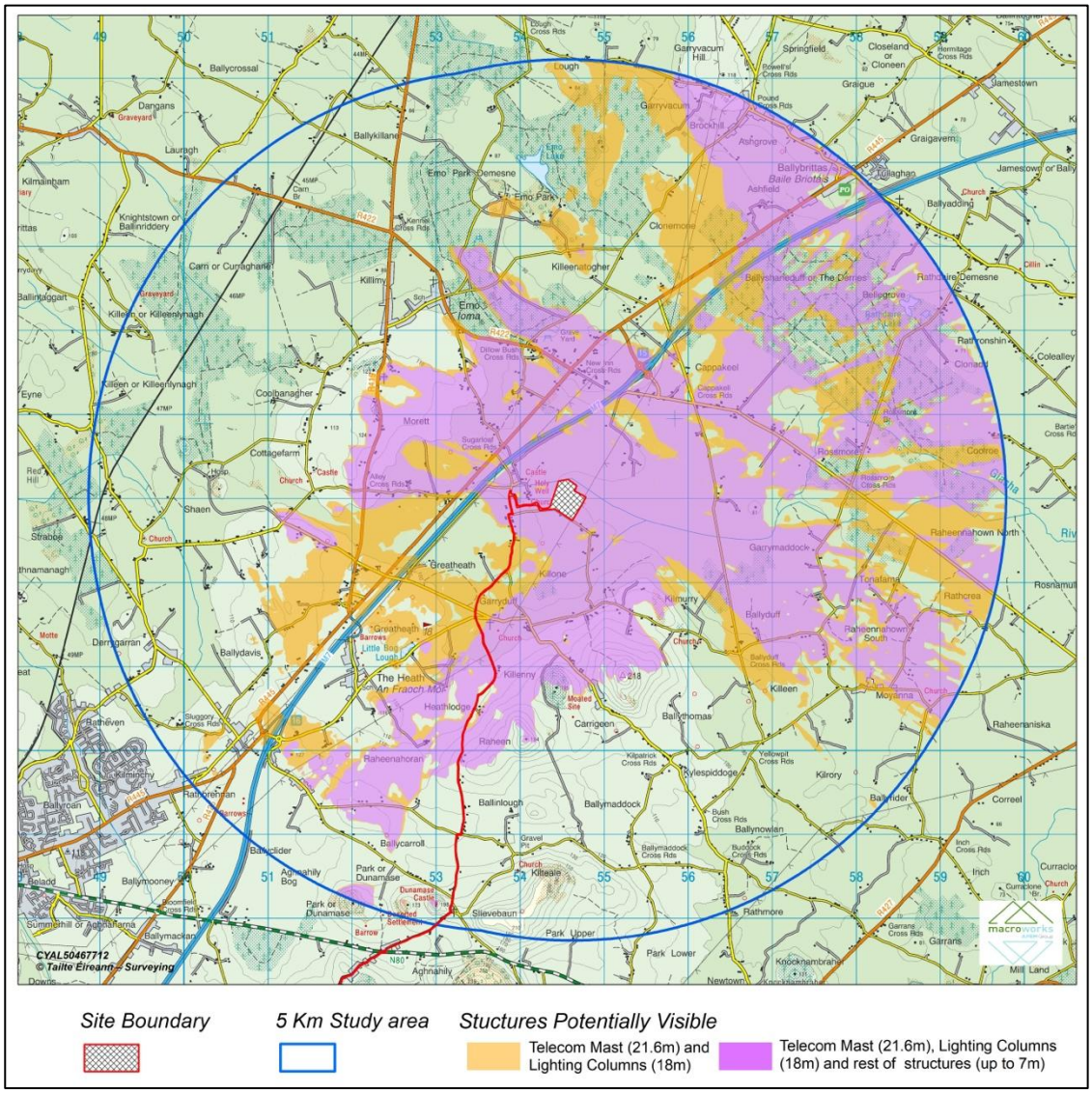


Figure 1.4 Standard (bare-ground) ZTV map (Refer to Appendix A for larger scale version)

The following key points are illustrated by the 'bare-ground' ZTV map (see Figure 1.4 above):

- The proposed substation and its ancillary structures have the potential to be visible throughout much of the immediate study area, and across parts of the wider surrounding study area, due to the relatively flat nature of the terrain.
- To the northwest, the potential for visibility of the proposed structures is largely contained at a distance of approximately c. 2–2.5 km from the site by low rolling terrain.
- Similarly, to the south, visibility is generally well contained by a series of rolling hills located within the southern half of the study area, with some potential for visibility extending further to the southwest.
- To the northeast and east, the potential for theoretical visibility extends close to the periphery of the study area due to the flat nature of the terrain.
- There is some potential for visibility of the proposed structures at Emo Park and Demesne; however, this is limited to the tallest elements, such as the telecommunications mast and lightning masts.

The most important point to make in respect of this 'bare-ground' ZTV map is that it is theoretical. Whilst some of the proposed substation buildings comprises of larger built forms, the largest of which are slender in nature, the surrounding landscape is heavily vegetated and will result in the proposed substation development being screened and softened by surrounding and intervening hedgerow vegetation, trees and numerous buildings, walls and embankments scattered throughout the study area.

1.4.2.1 Identification of Viewshed Reference Points as a Basis for Assessment

Viewshed Reference Points (VRP's) are the locations used to study the visual impacts of a proposed development in detail. It is not warranted to include each and every location that provides a view of a development as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the proposed development. Instead, the selected viewpoints are intended to reflect a range of different receptor types, distances and angles. The visual impact of a proposed development is assessed by Macro Works using up to 6 no. categories of receptor type as listed below:

- Key Views (from features of national or international importance) (KV);
- Designated Scenic Routes and Views (SR/SV);
- Local Community views (LCV);
- Centres of Population (CP);
- Major Routes (MR);
- Amenity and heritage features (AH).

VRP's might be relevant to more than one category and this makes them even more valid for inclusion in the assessment. The receptors that are intended to be represented by a particular VRP are listed at the beginning of each viewpoint appraisal. The Viewshed Reference Points selected in this instance are set out in the Table 1.6 and Figure 1.5 below.

Table 1.6 Outline Description of Selected Viewshed Reference Points (VRPs)

VRP No.	Location	Representative of	Direction of view
VP1	R419 at Coolbanagher	MR	SE
VP2	R445 at Morett north of the M7	MR, LCV	NW
VP3	Local road laneway at Morett west of Morett Castle	LCV	SE
VP4	L78151 local road at Morett	LCV	N & E
VP5	L7816 local road at Killone	LCV	N
VP6	L7812 east of the Heath Golf Club	LCV, AH	E



Figure 1.5 Viewpoint location map

1.5 MITIGATION AND RESTORATION MEASURES

The main mitigation by avoidance measure employed in this instance is the siting of the proposed development in a robust relatively typical rural landscape context comprising relatively flat terrain. The study are is also notably influenced by numerous other development types including, extensive areas of conifer forestry, the M7 motorway corridor, several regional road corridors and the surrounds of the urban settlement of Port Laois. The study area also avails of a high degree of vegetative screening, so that the proposed development will not be a highly prominent feature within the surrounding landscape.

In addition to mitigation by avoidance measures, retention of existing hedgerow boundaries within and around the consented solar farm boundary aids visual screening, and maintains the existing field pattern. In this respect, the proposed substation and consented solar farm development are not perceived to impose itself on the existing landscape pattern.

In addition to retaining the existing hedgerows within around the consented solar farm, it is also proposed to bolster existing perimeter and internal hedgerows with under-planting and inter-planting of whip transplants (i.e. Hedgerow Type 1 - see Figure 1.6 below) in order to ensure dense and consistent screening of the site in perpetuity. This will be undertaken where required to thicken and fill gaps in the existing hedgerow network prior to the construction phase, thus allowing for any growth in the period between a grant of planning permission and construction of the development. Advanced nursery stock in the form of 8-10cm girth trees will be used to fill any noticeable gaps and plant species will be selected to complement the existing broadleaf hedgerow species mix around the site and will be of local provenance. Where not already exceeded by existing vegetation, it is intended to manage hedgerows up to 3-4m in height. This height will be achieved by a combination of allowing lower sections of existing hedgerows to mature, filling obvious gaps with advanced nursery stock and providing an additional line of whip planting to selected hedgerows that require densification. Refer to the Landscape Mitigation Plan for the consented solar farm LD_CPPKL-SLR for details and to the landscape plan for the proposed substation development (ref LD_CPPKL-SID 3.1) submitted with this application.

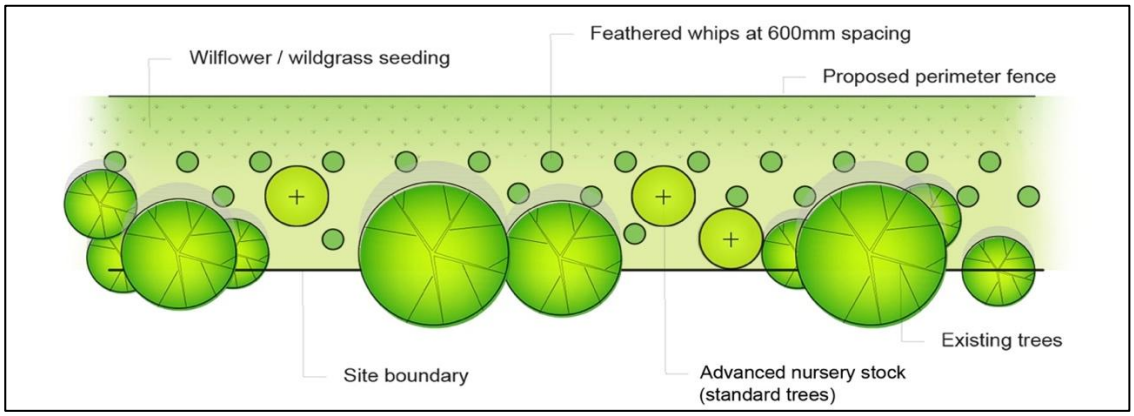


Figure 1.6 Hedgerow Type 1: indicative boundary planting detail showing the approach to inter-planting and under-planting of existing hedgerows (where consolidation is needed).

It is also proposed to plant extensive areas of new 'Type 2' hedgerows (**Error! Reference source not found.** refers), with whips and a high proportion of advance nursery stock trees (c.3m planted height), along several sections of the site consented solar farm boundary to further screen the proposed development and wider solar farm from some of the nearest surrounding receptors. All of this planting will be allowed to mature up to a maintained height of 3-4m to aid in the screening and softening of the proposed development from nearby dwellings and surrounding local, regional and national roads.

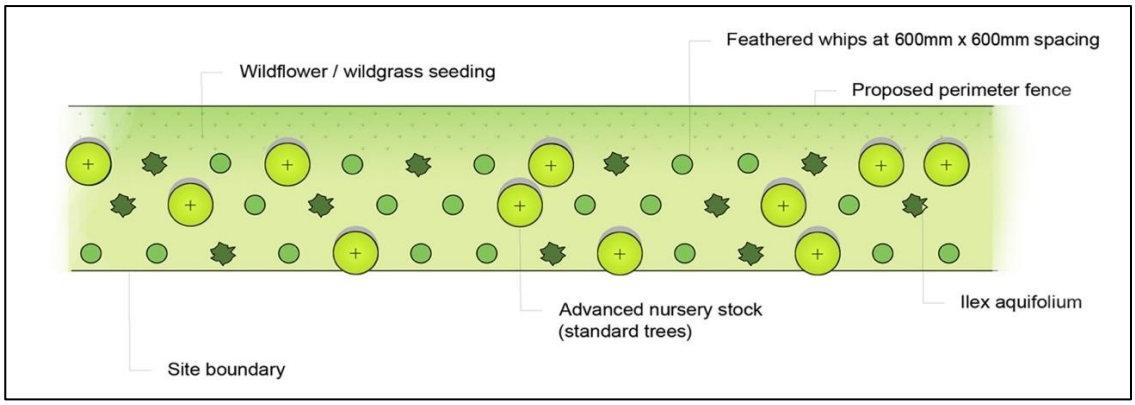


Figure 1.7 Indicative boundary planting detail showing the introduction of new boundary hedgerow TYPE 2

Corridors of native woodland area also proposed throughout the wider solar farm site and along the southern boundary of the proposed substation to further soften and screen the proposed development from several nearby residential dwellings. This native thicket/woodland mix will be provided in the form of high canopy (dominants) species, low canopy (sub-dominant) species, understory and fringe (higher shrubs) species and understory and edge (lower shrub) species, and will comprise of a mix of advanced nursery stock and whip planting of local provenance. The proposed planting will be allowed to grow out to reach maturity and will result in a dense and consistent vegetative screen for the proposed development from the nearest residential receptors located between the central solar parcels.

1.6 IMPACT ASSESSMENT

1.6.1 Do-nothing scenario

The *'do-nothing'* impact refers to the non-implementation of the proposed development. The primary effect of this would be that the impacts and effects identified would not directly occur. In this regard the following issues are relevant. The site, which is currently contained in pastoral farmland, would likely be managed for typical agricultural practices, whilst the surrounding perimeter vegetation would continue to grow out, some of which would be maintained by the current landowners.

1.6.2 Assessment of Receptor Sensitivity – Landscape

Landscape value and sensitivity are considered in relation to a number of factors highlighted in the Guidelines for Landscape and Visual Impact Assessment 2013, which are set out below and discussed relative to the proposed development site and wider study area.

The landscape of the study area presents as a relatively typical rural environment, where values are most often associated with rural productivity, rather than a strong sense of tourism, natural beauty, or scenic amenity. The site itself is dominated by areas of agricultural farmland, intersected by hedgerow vegetation, with much of its eastern extent bordered by extensive areas of commercial conifer forestry. The study area is also influenced by a range of highly anthropogenic features, such as major route corridors, including the busy M7 motorway, which runs through its northern extent. Several settlements are scattered throughout the area, with the outskirts of the urban settlement of Port Laois marking the western periphery. Nonetheless, there are notable heritage and amenity features scattered throughout the landscape that contribute to landscape values associated with cultural heritage and recreational amenity. Emo Park and Demesne is a popular local amenity and tourist attraction in the northern part of the study area, while the Rock of Dunamase is a prominent heritage feature in the southwestern extent, offering broad panoramic views across the wider landscape. The Grand Canal also hosts a popular waymarked trail, contributing to a localised sense of scenic amenity in the southern periphery of the study area.

In terms of landscape designations the proposed substation compound is located within the landscape character type - '2 Lowland Agricultural Areas', which are the most common character type in the county and are primarily comprised of pastoral and tillage agriculture. This character type is classified with a 'Low sensitivity' which are described as "areas with the capacity to generally accommodate a wider range of uses without significant adverse effects". The proposed grid connection traverses through LCT 1 - Mountain, Hills and Upland Areas, which has a heightened sensitivity classification of High-medium. With regard to scenic designations, there is one protected view within the study area, which relates to Scenic View 11 - Views towards Carrigeen Hill'.

Overall, in terms of landscape designations, it is not considered that the study area is highly susceptible to change. Furthermore, the baseline context of the site and study area presents as a robust, modified landscape, albeit with some localised areas where heritage and amenity features generate an increase degree of sensitivity and distinctiveness. Therefore, on balance of these factors and in accordance with the criteria outlined in in Table 1.1, the landscape sensitivity is deemed to be **Medium-low**, with localised areas of higher and lower sensitivity.

1.6.3 Assessment of Receptor Sensitivity – Visual

The study area generally presents as a typical rural landscape, although some visual receptors within the area have a slightly heightened sensitivity due to the presence of locally elevated terrain, which affords broad open views across the wider countryside and areas of high amenity, such as the Grand Canal Way, that exhibit some sense of the naturalistic. The study area also encompasses a number of notable heritage assets, which contribute both to a sense of cultural heritage and to a degree of scenic amenity.

The visual receptor sensitivity of heritage assets ranges between high and medium. Broad, expansive views of the Rock of Dunamase, and from it, are considered highly susceptible to visual change and, thus, are classified as having a high receptor sensitivity. Views within Emo Court Demesne are also considered susceptible to change, particularly those from the principal viewing aspects within the demesne, such as views along the access to the stately home and to and from the house. The visual receptor sensitivity within Emo Court ranges between high and high-medium. Local heritage receptors throughout the study are less susceptible to change such as old churches and graveyards, and thus, are classified with a Medium visual receptor sensitivity.

Views of the working agricultural landscape are generally pleasant in terms of its rolling pastoral aesthetic and 'green', settled working character. The network of hedgerows and vegetation throughout it contributes to some sense of naturalness and, combined with its undulating topography, generates a sense of containment in many locations. However, whilst a pleasant pastoral aesthetic is noted throughout some parts of the study area, as noted above, the surrounding local and wider landscape is also influenced by an array of anthropogenic features such as major transport routes, urban settlements, and industrial development. Overall, the sensitivity of visual receptors within the more typical working landscape context tends to range between Medium and Medium-low, with those of a Medium sensitivity representing more open expansive views across the wider landscape.

Key differentials in terms of visual receptor sensitivity relate to the occupation of the visual receptor and whether views of the surrounding landscape are an inherent part of the experience. Static residential receptors are considered generally more susceptible to changes in views over those where views are experienced transiently by those travelling through the landscape, particularly on major transport routes where road infrastructure and traffic volume draw from visual amenity. Likewise, receptors located in closer proximity to the site are considered more susceptible to changes in views over those where views are experienced at a distance.

On the basis of the site-specific factors outlined above and in accordance with the general visual receptor sensitivity considerations contained in the methodology Section 1.2.5, visual receptor sensitivity judgement are provided for each representative viewpoint in the table below in section 0 below

1.6.4 Magnitude of Landscape Effects – Construction Stage

In terms of physical landscape effects, the proposed substation and grid connection will require some localised excavation works to facilitate the foundations of the proposed control building and other ancillary electrical infrastructure equipment. Some sections of new internal access/service tracks will be constructed to service the substation and these will be similar in nature to farm tracks that can be found throughout this rural context. There will also be some soil stripping to facilitate the full extent of the proposed substations footprint.

Whilst there will be some localised hedgerow and vegetation removal required for the consented solar farm development, this will be offset by the planting of new native hedgerow and the bolstering of some of existing hedgerow that forms part of the wider solar farm application. Furthermore, new native woodland corridors will also be established throughout the wider solar farm development. It should also be noted that some localised areas of vegetation removal may be required to facilitate the proposed grid connection, however this will be limited in so far as possible. Areas of trenching required for the grid connection that traverse and grassed areas will also be reinstated post construction completion.

All substation and grid connection works will be carried out in accordance with international best practice and full compliance with health and safety requirements. Construction of the proposed substation is estimated to take xx months to complete. Construction related effects are, therefore, brief in nature and will only result in short-term landscape and visual impacts. Overall, the magnitude of construction stage effects is deemed Medium.

Combined with the Medium-low landscape sensitivity of the study area, the significance of construction stage effect is deemed Moderate-Slight and of a Negative quality.

1.6.5 Magnitude of Visual Effects – Construction Stage

During construction, the main visual impacts will arise from frequent heavy vehicle movements and worker vehicles travelling to and from the site and using the site entrance. In addition, there will be construction machinery on site, which may rise above intervening vegetation and buildings. There will also be some localised stockpiles of stripped topsoil, construction materials awaiting use and a small construction compound located on the site. The grid connection aspect of the proposed development will also require some trenching and will result in some highly localised visual effects that are similar to local construction road works. In this regard, they will not generate any notable visual effects.

However, aside from the site's immediate vicinity, a large part of this short-term activity within the site will remain screened and partially screened from view the surrounding mature layers of intervening vegetation. Furthermore, construction-related activity is short-term in nature and will cease once the development becomes fully operational. Thus, construction stage impacts are likely to result in a visual effect no greater than Medium in the immediate surroundings of the site.

Coupled with the Medium and Medium-low visual receptor sensitivities in the immediate surrounds of the site, the construction stage visual impacts in the immediate vicinity of the site will be no greater than Moderate, and will reduce considerable beyond 500m-1000m from the site, where the proposed substation development and wider solar farm will be heavily screened. As a result, construction stage visual impacts are not considered to be significant..

1.6.6 Magnitude of Landscape Effects – Operational Stage

There will some very localised physical landscape effects in the immediate context of the proposed substation compound, however, for the most part, the terrain of the site will remain largely unaltered. In fact, the proposed landscape mitigation measures, which comprises the enhancement (bolstered) existing hedgerow, will generate some localised positive landscape effects during the operation phase of the proposed development.

Whilst the wider solar farm will be decommissioned after 40 years, the proposed substation and grid connection will remain as part of the electricity transmission network, and thus, landscape effects generated by the proposed substation development are deemed Permanent in terms of duration. With regard to the grid connection element of the proposed development, the grid connection corridor will be fully reinstated post construction completion and will generate no landscape or visual effects during the operation phase of the proposed development.

It is important to note that existing electricity cables and pylon structures are characteristic features of this rural landscape, and thus, the introduction of the proposed substation represents the intensification of an established land use as opposed to the introduction of a new and unfamiliar one. Furthermore, due to the relatively contained nature of the study area, there will be limited parts of the study area that will afford visibility of the proposed substation. Thus, the limited visibility of the proposed substation development and wider solar farm will heavily diminish the development's potential to alter the surrounding landscape character.

On the basis of the factors discussed above it is considered that the magnitude of operational stage landscape effect is Medium within the immediate vicinity, being those lands contained within approximately 500m of the proposed development. Thereafter, the magnitude of the operational stage landscape impact is deemed to reduce to Low and Negligible, as the proposed development becomes a progressively smaller component of the overall landscape fabric.

With reference to the significance matrix (Table 1.4) above, the **Medium-low** landscape sensitivity judgement attributed to the study area, coupled with a **Medium** magnitude of landscape effect in the immediate vicinity (<500m) of the proposed development is considered to result in an overall significance of no greater than **Moderate-slight**, with the remainder of the 5km radius study area likely to experience **Slight** or **Imperceptible** landscape effects.

1.6.7 Magnitude of Visual Effects – Operational Stage

The assessment of visual impacts at each of the selected viewpoints is aided by photomontages of the proposed development. Photomontages are a 'photo-real' depiction of the scheme within the view utilising a rendered three-dimensional model of the development, which has been geo-referenced to allow accurate placement and scale. For each viewpoint, the following images have been produced:

3. Existing view;
4. Outline view (yellow outline showing the extent of the proposed substation location including all associated overground works overlaid on the photograph - pink line showing the outlined of the consented solar farm development);
5. Montage view
6. Montage view with mitigation established.

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
VP1	R419 at Coolbanagher: This is a view from locally elevated land in the townland of Coolbanagher, representative of both the major route and surrounding local community receptors. The view extends across sloping pastoral lands in the foreground, towards a patchwork of further pastoral lands that, in combination with layers of hedgerow vegetation, form the dominant land use throughout this view	Medium-low	The proposed substation development will be barely discernible here due to the distance from the site and layers of intervening vegetation located in the direction of the proposed substation. Thus, the magnitude of effect is deemed Negligible, even prior to the establishment of the proposed mitigation screen planting.	Imperceptible / Neutral / Short-Term	Imperceptible / Neutral / Permanent
VP2	R445 at Morett north of the M7: This is a contained view afforded from a locally elevated section of the R445 regional road. Whilst views across the wider landscape are afforded to the north, to the south, in the depicted view, a nearby area of hedgerow vegetation, backed by mature trees, contains this aspect of the view at a near distance.	Medium-low	The proposed development will be entirely screened in this direction by the dense layers of intervening vegetation. Therefore, the magnitude of the visual effect is considered negligible by default.	Imperceptible / Neutral / Short-Term	Imperceptible / Neutral / Permanent
VP3	Local road laneway at Morett west of Morett Castle: This is a partially contained view afforded from a local road laneway in the townland of Morrett, adjacent to the ruins of Morrett Castle, which are located on private land to the east of this viewpoint. The depicted view extends south towards sloping pastoral	Medium-low	Whilst the proposed substation has the potential to be briefly viewed here, low rolling terrain heavily screens its principal built forms from this viewing context. Indeed, even if briefly viewed here, it will have no notable effect on the visual amenity afforded from this location. Thus, the magnitude of visual effect is deemed Negligible, even prior to the	Imperceptible / Neutral / Short-Term	Imperceptible / Neutral / Permanent

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
	lands, where a low ridge in the terrain partially contains the view to the south. Several residential dwellings are visible throughout the view, the nearest of which is located to the southeast and is partially screened here by mature trees and hedgerow vegetation		establishment of the proposed mitigation screen planting.		
VP4	L78151 local road at Morett: This is a contained view from a local road in the townland of Morrett, adjacent to a small linear cluster of residential dwellings. The depicted view is oriented to the east along the local road and is representative of the surrounding local community receptors. The view to the east is relatively contained by the roadside hedgerow vegetation and other surrounding hedgerows. Brief visibility of the landscape in the background is afforded from here and is contained by the elevated, rolling uplands in the distance	Medium-low	Whilst this view represents one of the nearest potential views of the proposed substation development, it will remain heavily screened and will have a limited visual presence. Filtered views of the proposed substation structures may be obtained above the surrounding vegetation; however, the intervening hedgerow predominantly screens the larger built elements associated with the development. Notwithstanding this, some clearer views of the proposed structures are likely to be available from the first-floor level of nearby residential dwellings. Accordingly, the magnitude of visual effect is assessed as Medium–low. Once the proposed mitigation screen planting has fully established, the substation will be further screened, with the new native woodland planting to the south of the substation both screening and softening views of the development, including those from first-floor levels of surrounding dwellings. Consequently, upon establishment of the mitigation	Slight / Negative / Short-Term	Slight / Negative / Permanent

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
			planting, the residual magnitude of effect will reduce to Low.		
VP5	L7816 local road at Killone: This is a locally elevated view afforded along a section of local road in the townland of Killone, representative of the surrounding local community. This section of road provides one of the more open views along the corridor, extending to the north across flat to gently rolling pastoral fields, intersected by layers of intervening vegetation and residential landholdings. In the distance, the view is contained by low rolling terrain, cloaked in dense areas of stacked vegetation.	Medium	The proposed substation buildings and associated structures will be visible in the distance beyond a cluster of residential dwellings and agricultural farm buildings. The substation structures are visually consistent with the existing built environment in this view in terms of their scale and form. While the electrical infrastructure may present a slight contrast with the more typical rural land uses, it is well set back from this viewpoint and will exert minimal influence on the views available from this location. Overall, the magnitude of visual effect is assessed as Low–negligible prior to the establishment of the proposed mitigation screen planting. Due to the locally elevated nature of this section of road, the proposed mitigation planting will have limited influence on this view. Accordingly, the residual visual effect will remain Low–negligible.	Slight-Imperceptible / Negative / Short-Term	Slight-Imperceptible / Negative / Permanent
VP6	L7812 east of the Heath Golf Club: This is an open view across flat terrain immediately east of the Heath Golf Club. The depicted view is oriented to the east and is representative of the neighbouring amenity feature and surrounding local community receptors. Beyond the open foreground, layers of intervening hedgerow vegetation become stacked in	Medium-low	The proposed development will be entirely screened in this direction by the dense layers of intervening vegetation. Therefore, the magnitude of the visual effect is considered negligible by default.	Imperceptible / Neutral / Short-Term	Imperceptible / Neutral / Long-Term

VP NO.	EXISTING VIEW	VP SENSITIVITY	VISUAL IMPACT MAGNITUDE (PRE & POST MITIGATION)	PRE MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT	POST MITIGATION SIGNIFICANCE / QUALITY / DURATION OF IMPACT
	perspective and partially contain the view to the east, with some brief glimpses afforded towards the distant background through gaps in the layers of vegetation.				

1.6.8 Monitoring

1.6.8.1 Construction Phase

Landscape tender drawings and specifications will be produced to ensure that the landscape work is implemented in accordance with best practice. A landscape management and maintenance schedule will also form part of this application. This document will include tree work procedures, soil handling, planting and maintenance. The contract works will be supervised by a suitably qualified landscape architect.

All tree protection requirements will be installed on commencement of the development and removed on a phased basis as stages of the development are completed.

1.6.8.2 Operational Phase

This will consist of weed control, replacement planting, pruning etc. All landscape works will be in an establishment phase for the initial three years from planting. All works will be monitored on an ongoing basis to ensure the quality of the development is maintained. Details of all monitoring and maintenance are outlined in the Landscape Management and Maintenance Schedule for the proposed development.

1.7 CUMULATIVE EFFECTS

The principal potential cumulative effects arise in relation to the consented solar farm development, which is functionally linked to the proposed SID project. The combined presence of both developments will result in an increase in the extent and intensity of energy-related infrastructure within the receiving landscape. In this context, the proposed substation is likely to be perceived as an integral component of the wider consented solar farm development, rather than as a distinct or unrelated feature.

Notwithstanding this association, the consented solar farm development represents the principal contributor to cumulative landscape and visual effects, by virtue of its greater scale and spatial extent. The proposed substation, while contributing to this cumulative scenario, will represent a comparatively minor addition in terms of both physical presence and perceptual influence, as indicated by the limited residual visual effects set out above.

Overall, the combined effect of the two developments is assessed as giving rise to residual cumulative effects of a moderate to low order in both landscape and visual terms. This reflects the fact that the primary driver of change is the consented solar development, with the proposed substation making a limited incremental contribution.

Accordingly, it is concluded that the combination of the proposed substation and the consented solar farm development will not give rise to significant cumulative landscape or visual effects.

1.8 CONCLUSIONS

In terms of landscape impacts, the proposed substation development is considered to have only a modest physical impact as it is consolidated within the existing hedgerow network and will not require significant excavation works.

In terms of impacts on landscape character, the proposed substation development will likely be perceived as part of the consented solar farm development, with the substation compound encircled by permitted panels. The substation development and wider solar farm is contained within a part of the surrounding landscape that has a strong influenced from utilitarian land uses and built features such as major route corridors and existing overhead cable corridors. Furthermore, the proposed substation is relatively discreetly located within a part of the surrounding landscape that avails of dense layers of intervening vegetation.

Much of the site, wider solar farm and its immediate surroundings constitute a productive, modified rural landscape with associated landscape values. Whilst the proposed development may slightly alter the local 'landscape fabric', it does not markedly affect the prevailing landscape pattern or the overriding rural landscape character of the area.

Therefore, combined with the 'Medium-low' magnitude of operational stage landscape impact, the overall significance of operational stage landscape effect was deemed no greater than 'Moderate-slight' and of a Negative quality.

Visual Impacts were assessed at 6 viewpoints throughout the immediate and wider landscape context, representing various viewing distances, angles and receptor types. Whilst some localised parts of the landscape are considered sensitive to change, the surrounding landscape presents with no strong sense of distinctiveness and is influenced by numerous highly anthropogenic land uses, including major route infrastructure, quarries and urban settlements.

The overall significance of visual effect ranged between Slight and Imperceptible, with the majority of the representative views have a limited or no visibility of the proposed substation. In this regard, the proposed substation is considered to be well sited within a more discreet part of the surrounding landscape and can be well visually accommodated where partially visible.

Overall, it is considered that the proposed substation and wider solar development is a suitably sited and scaled development that is well-screened by the surrounding layers of dense vegetation. Furthermore, in terms of the surrounding landscape and visual policy, it is considered that the proposed development is contained in a robust part of County Laois that can well accommodate a development of this scale and nature. Whilst the combined substation and consented solar farm development will contribute to some cumulative landscape and visual effects, these are assessed as Not Significant due to the contained nature of the surrounding landscape and robust landscape character of the study area.

1.8.1 Overall Significance of Effect

Based on the landscape and visual impact judgements provided throughout this LVIA, the proposed Cappakeel SID substation and grid connection is not considered to give rise to any significant residual effect.

1.9 REFERENCES

- Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);
- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and
- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.